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ON THE LOCATIONS OF THE FUNCTIONS OF THE BRAIN.

An Appreciation of the Phrenological Doctrine, or of the Location of the Intellectual and Moral Faculties, by means of Comparative Anatomy.

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[Translated from the French by JOHN F. MAY, M.D., of Washington, D. C., and communicated for the Boston Medical and Surgical Journal.]

GALL, comparing animals among themselves, and finding that certain habits often correspond with certain forms of the brain and cranium, has not hesitated to consider these forms as the causes of these habits. Thus, when he has seen the brain of carnivorous animals full about the temples, he has declared that the temporal convolutions of the hemispheres were the organs of cunning and destruction. Is such a conclusion exact? It is impossible to decide *a priori*. We shall therefore describe and expose the forms of the brain and cranium of animals whose habits are more or less understood. As the study of the superficial external form belongs only to our subject, we shall abstain from anatomical details which would be entirely irrelevant.

§ 1. *Forms of the Brain.*

In *birds*, the brain, formed principally by the corpus striatus, represents a triangle with its base posterior and slightly rounded at its external angle: deprived of its convolutions, it presents an even surface without eminences. The cerebellum, of a triangular shape but much less elongated, and situated behind and below, is partly placed in the separation between the two hemispheres.

Form of the Brain in the Mammalia. Gnawing Animals.—The brains of gnawing animals, such as mice and rats, have the form of an elongated cone with the base posteriorly; those of rabbits, and sea-hogs (cabiats), are also conical, but less elongated. The convolutions are scarcely defined.

Carnivorous Animals.—The brain is slightly elevated, flat from one side to the other. Its greatest transverse diameter is the bi-temporal, which is nearly equal to the antero-posterior. According to M. Cruveilhier, the relation of the depth and number of the convolutions to the mass of the brain is the same in carnivorous animals as in man.

* Being part of a memoir addressed to the Medical Society of Bordeaux, in reply to the question proposed by this Society, viz.:—*To determine by reason, comparative anatomy, pathological anatomy and physiological experiments, what there is of certainty in the locations of the functions of the brain.* The Memoir obtained the first medal awarded by the Society.

In the *pachidermata*, the antero-posterior diameter much exceeds that of the bi-temporal, which has appeared to us as less in the solipeda than in the fissipeda (the wild boar, the musk boar or pecary). In the horse the height of each hemisphere is nearly equal to its breadth.

In *ruminant* animals the hemispheres are elongated, narrow, and as large in front as from one temple to the other. We should observe, however, that a brain of the camel, preserved in alcohol, appeared to us larger at the temples than those of other ruminant animals. These, as well as the *pachidermata*, are not different from carnivorous animals, either as it regards the depth or the proportional number of the convolutions.

In the *quadrumana* the brain is more elongated and elevated than in the preceding classes: its bi-temporal diameter is greater than that of ruminant, and less than that of carnivorous, animals. The *lemurs*, from their resemblance to the latter, constitute among the *quadrumana* a remarkable exception.

These brief descriptions have been made from the dissections of small animals, as dogs, cats, sheep, rabbits, and from the inspection of the brains of the tiger, lion, panther, camel and monkey, which are to be seen in the Museum of the Garden of Plants. These brains may be deformed by the action of alcohol, but not so much so as to prevent an approximate appreciation of their forms.

Moreover, the examination of the great number of skulls of animals which are to be found in the Museum of Comparative Anatomy, will abundantly supply any deficiency that may exist in the description of the brains. But a question here presents itself. Does the form of the cranium represent that of the brain?

The cavity of the cranium is an exact image of the brain, so much so that, on the arch of the orbits in the temporal fossæ and on the parietal and occipital bones, we see alternate eminences and depressions, which represent the infractuous form of the encephalic surface. And if we run plaster into the cranium it will show us very accurately the configuration of the cerebral surface. The form of the cavity of the cranium represents, then, that of the encephalon.

Does the external surface of the bones of the cranium correspond with the internal? As it regards details, our answer is negative; for the first is even, the second infractuous. But if we wish to appreciate in mass the relative size of a portion of the brain, without taking into account each particular convolution, we assert that such an appreciation may be derived from the study of the external form of the cranium, provided that an allowance is made for the frontal sinus and the different external ridges (cretes) so remarkable in carnivorous animals. In fact, in man himself, whose cranium presents the external conditions most favorable to an appreciation of the brain—in man, we say, the parallelism of the two tables is not continuous. The diploe is distributed unequally in different points of the cranium. Moreover, in children from 5 to 10 or 12 years, we have often observed that the bones were thinner near the sutures than anywhere else. But all these circumstances do not materially modify the relation between the two tables, or give rise to a se-

rious objection. We believe, then, with the phrenologists, that in general the form of the brain may be represented by the exterior of the cranium. That which is true in regard to man, is also for the greater part of animals, but not for all; for we find in certain pachidermata an exterior conformation of the cranium which would not give us a just idea of the encephalon—which will appear in the particular descriptions upon which we are about entering.

§ 2. *Forms of the Cranium.*

In birds the cranium presents a smooth surface, having no parietal ridge. In the posterior region we find the rudiment of the occipital ridge, and the anterior is almost entirely occupied by the orbits, separated from each other by a thin partition.

The cranium of birds, broad behind and narrow in front, gives a just idea of the form of the brain, the appreciation of which is more easy from the exterior of the cranium than in the mammalia. The form of the cranium varies but little in birds, although their habits are very different; thus, the eagle, the vulture, and the kite, have not the head more full from side to side than the Canary or the cock. The last has not the occipital region either more or less developed than other animals of its class. The magpie, whose rapacity is proverbial, has no phrenological conformation corresponding with its instinct: and from our observations made at the Garden of Plants, on the skeletons of a vast number of birds, it has resulted that the supra-orbitary region of the os frontis, which corresponds to the sense (organ) of locality, is not more distinct in migrating birds, such as the swallow, the stork and the gull, than in those which are sedentary, as the turkey and peacock.

In a word, the more we examine this class of vertebrated animals, the more we are astonished that the phrenologists should endeavor to support themselves from the conformation of the cranium. The heads of the mammalia present to us both more interest and more diversity.

Mammalia. Gnawing Animals.—In mice and rats the head represents a cone, the summit of which is formed by the face; the imaginary prolongation of its axis does not pass more than about half a line above the occipital foramen (foramen magnum), so that this prolongation coincides nearly with the axis of the spinal cord. The greatest breadth of the cranium, from one side to the other, corresponds with the occipito-parietal suture. The occipital or cerebellular region, deprived of a ridge (crete) in small mice, but possessing a slightly salient apophysis in large rats, is a little narrower than the posterior cerebral region. Moreover, the cranium is very narrow from one temple to the other; the flat squamous surfaces are continuous without demarcation with the orbitary cavities.

The rabbit, the hare, the sea-hog and the beaver, essentially differ from the small gnawing animals. 1st, because the occipital foramen is six or seven lines below the level of the arch of the cranium. 2d, the occipital region is not arched and horizontal from the front to the back, but a plane, and so abruptly oblique as to be united to the arch of the parietal bones, forming a very acute angle represented by a salient ridge.

3d, the broadest part of the cranium is placed above the zygomatic apophyses, as in carnivorous animals; this peculiarity is especially marked in the beaver.

The gerboa (*gerboise*, Fr.) differs from all quadrupeds in the form of its cranium; the occipital foramen (foramen magnum) being nearly as central as in man, and the head as broad about the temples as at the occiput.

Carnivorous Mammalia.—We shall examine the external formation of the cranium of this class of animals: 1st, in the occipital and the superior parietal regions; 2d, in the parieto-temporal region; 3d, in the frontal region.

A. The occipital surface, smooth or uneven according to the strength of the species, terminates superiorly by a ridge the height and thickness of which is always in direct and compound ratio with the height of the animal and the size of the face, and in inverse ratio with the cerebrum and cerebellum.

B. The apophyses for the insertion of the temporal muscles evince in the different species notable differences, which have intimate relations with the form and the volume of the encephalon. In puppies of a small race they are reduced to two slightly projecting lines, which approach as they advance posteriorly, and separately lose themselves in the occipital ridge. As the animal advances in age, the lines arising from the external orbitary apophysis are developed, and converging more and more so as to form at the posterior portion of the parietal bones a ridge which we shall call the *inter-parietal*. In the greyhound, the two insertions uniting at short distances from their points of departure, the apophysis of which we are speaking occupies the entire summit of the head from the forehead to the occiput. In the spaniel, on the contrary, the two temporal lines do not unite until near the occiput, and circumscribe a triangle, the base of which is posterior and the axis of which corresponds with the superior surface of the parietal bones. From these inverse dispositions it results that the arch of the skull exists in the spaniel, whilst the cranium of the greyhound is reduced to two lateral planes united superiorly by a solid angle; that is to say, by the parietal ridge. These two species offer in this respect the two extreme dispositions: dogs of the chase, mastiffs, &c., resemble more or less the spaniel or the greyhound, according as the brain is more or less voluminous. The large carnivorous animals, as the tiger, lion, panther, hyena, &c., are distinguished by the length and height of the inter-parietal apophysis, the numerous variations of which may be comprised under the following general rule, viz.—the length and thickness of the inter-parietal ridge is in inverse ratio with the brain, and in direct ratio with the face.

C. The parieto-temporal region, where the principal instincts of carnivorous animals have been placed, bounded by the insertion of the temporal muscle, by the occipital ridge, and the base of the zygomatic process, constitutes a uniform projection, of which the parietal always forms a larger portion than the squamous bones. This last is composed of two portions, the posterior of which, depressed in the form of a groove,

is lost in the ossification of the occipital apophysis, whilst the other, situated above the zygomatic arch, corresponds strongly with the cerebral hemispheres. The development of the region of which we are speaking is always in inverse ratio with the inter-parietal ridge, and in direct ratio with the brain; from whence it results that it is the more considerable as the animal is smaller.

From this fact we might be induced to conclude that the fulness at the temples is in inverse ratio with the ferocity of the animal; but if we reflect, we see that when this projection increases or diminishes, all the other portions of the brain, less appreciable externally, increase or diminish in the same proportion: so that in small and large carnivorous animals the relation of the organ of destruction to the other organs is exactly the same.

D. The frontal region is obliquely divided into two parts by the commencement of the temporal line, which starts from the external orbital apophysis. This line, more or less salient according to the species, as regards its development, has a direct relation with the parietal ridge and the face, and an inverse relation with the brain. Behind this line the post-orbital region extends, the convex surface of which always corresponds with the encephalon. In front, we find the superior frontal region and that of the sinus. The first does not exist in the large carnivorous animals, and in those species where we do not find it we see its surface diminish, as does the entire hemisphere, the appreciation of which is furnished by it. Thus it is tolerably large in puppies, very narrow and of a tongued shape in the bull-dog, and altogether wanting in the greyhound. The subjacent sinus follows the development of the face; from whence it results that its capacity is in an inverse ratio with that of the cranium. Its internal lamina corresponds with the brain, and is united by an acute angle to the external. The latter, convex in cats but a plane in the greater part of dogs, is much the most extensive and constantly follows the direction of the face. The cavity of the sinus is always subdivided into secondary cells by very thin laminæ.

It follows, from the above descriptions, that the size of the insertions of the temporal muscle and the capacity of the sinus faithfully indicate the respective development of the face and of the brain.

The small carnivorous animals, such as the weasel, the ferret and the ermine, are distinguished from the others by the following characteristics. Head much larger; frontal sinuses more considerable; orbits more slanting; the occipital ridge, thin and slightly salient, is at a small distance from the occipital foramen, and the latter is hardly below the imaginary prolongation of the axis of the head; the cranium is broad behind, and flattened between the temples. These small carnivorous animals, of which we are speaking, resemble rats in all these anatomical circumstances, which hereafter will be naturally explained.

Pachidermata.—All the skulls of the mammalia of this group are shaped according to two different types. To the first belong the wild boar and animals like it. To the second, the horse, the ass and the zebra.

First type. If we examine the cranium of the wild boar, we find, where it is most elevated, a thick, broad, transversal ridge, which is concave behind. It is the occipital ridge: the frontal, occipital and parietal

bones meet there, and thus represent four planes contiguous at their sides, which converge towards the summit of the head. The lateral planes formed by the parietal and temporal bones, are hollowed as it were into a broad groove, in the direction of their length, and become still wider as they rise upwards. They terminate at each extremity of the ridge, but their superior edge passes it both before and behind; and as the groove of which we have spoken is continued by it, it forms a crescent, concave externally at each extremity of the transversal ridge. These lateral planes are bounded in front by the temporal line, which starts from the external orbital apophysis, and rises obliquely towards the occipital ridge, where it is lost without being united with its fellow. The two temporal lines, very far apart below, but near to each other above, form the lateral boundaries of the anterior or frontal plane. From their disposition the latter is of a quadrilateral form, broader, however, below than at its vertex, where the superior edge is also lost in the occipital ridge. Oblique and very much inclined, the frontal plane intercepts a large sinus, whilst the occipital rises vertically in order to be united with the others. The four planes developed at the expense of the diploe, being cellular internally, have a common relation in the arch of the cranial cavity; the latter is a regular oval; its antero-posterior diameter is more considerable than its greatest transverse diameter, which extends from one temple to the other. It follows, from these dispositions, that the only parts where we can appreciate the encephalic mass by means of the cranium, are at the superior zygomatic region of the temporal bone for the brain, and the most inferior portion of the occipital bone for the cerebellum. But we should here premise, that in young animals analogous to the wild boar, and even in the adult *babiroussa* (Fr.), the type of which we are speaking, being considerably disfigured, presents only the vestiges. The temporo-parietal region is fuller, and the solid ridges are more feeble in proportion as the encephalon is greater.

Second type. The cranium of the horse resembles, in shape, that of the large carnivorous animals. Like the latter it has a median ridge, which deprives the parietal bones of a superior surface; it has a well-marked temporal fulness, although much less considerable; it has also, like them, a well-developed and rough occipital ridge and an oblique occipital plane, inclining towards the base of the skull; and, finally, there is a complete absence of the superior frontal region. The sinus, however, differs from that of the lion and tiger, being much more fully developed, and in having its external lamina in a vertical direction. The supra-orbital lines and the parietal ridge, being less developed than in carnivorous animals, take less part in the narrowing of the cranium, which more especially depends upon the encroachment of the sinus; which is explained by the decreased importance of the temporal muscles, and by the excessive volume of the nasal and superior maxillary bones; that is to say, by two anatomical dispositions—the first of which necessarily causes the feeble development of the ridges, and the second the augmentation of the frontal cells.

Ruminants.—All the skulls of this group of mammalia have, as common characteristics, shortness of the bi-temporal diameter, absence of the

inter-parietal ridge, and breadth of the pterygo-maxillary region. The head of the camel, like that of the horse and carnivorous animals, constitutes, among ruminants, a remarkable exception. Independent of their common characteristics, the crania of ruminant animals present differences by which we may form them into two general classes. In the first class may be included gentle, docile animals which browse upon the grass of the meadows, &c., as the ox and sheep. The second comprehends those which, grazing in thickets and high grass, inhabit the forest, and are distinguished by their agility and swiftness, such as the stag, the roe-buck and the chamois. In the ox, the frontal bone forms a slightly inclined plane, which is united to the occipital plane by a rounded ridge situated on the summit of the head. A little in front of this ridge, and at each extremity of its transverse diameter, may be observed an abundance of spongy tissue, in the midst of which the horns are implanted, and which is continuous with the frontal sinuses: on account of this disposition, the superior frontal region does not at all correspond with the brain. The posterior lamina of the sinus bounds the hemispheres in front, and the antero-posterior axis of the cranium strikes it at a right angle; it is continuous with an inferior lamina, which is horizontal, rough and convex, and which unites it to the external or anterior lamina. The latter, much less oblique than in carnivorous animals, follows invariably the direction of the face. The cavity of the sinus, more ample than in the other classes of the mammalia, is divided into many cells by small laminae. One of these cells, which is very considerable, extends, infractuons and deep, behind the orbit, and even to the spongy tissue of the horns. Each extremity of the greatest transverse diameter of the frontal region, situated without the sinus, is occupied by the orbits, which are thus widely separated from each other and have their posterior border complete. The parietal and temporal bones are very much depressed, and terminate at the ridge of the vertex.

In young and small animals these bones are broader and more prominent; their superior surface has no apophyses, and the ridge on the vertex is altogether behind, where it appears in the form of a thin, sharp lamina, on the sides of an eminence thick and solid in the middle. The occipital surface has always a vertical direction, and presents in the ox the rudiments of a ridge subjacent to the rounded ridge of the vertex. The distance of the occipital foramen from the ridge, as in carnivorous animals, is in proportion to the height of the animal.

In the stag and roe-buck the snout is directed in front and not towards the earth; the forehead and the face form, with the rest of the cranium, a more acute angle than in the preceding type; the horns are placed more anteriorly, the orbits are not so far apart, and the sinuses not so large. If to this we add that there is no solid ridge in the region of the vertex, we can very well conceive that the curves of the cranial cavity should be more regular and better developed, which in fact is the case. The numerous family of the antelopes belongs in part to both these classes which we have been considering. In the same way that the ridges in large carnivorous animals and certain pachydermata depress the cerebral cavity for the purpose of favoring the mechanism of the face, so

also in the principal ruminants the development of the frontal sinuses and of the cells of the horns contribute to the power of the face and to the narrowness of the cranium. It is the same principle, variable only in the manner of its application.

Quadrumana.—A class of quadrumana forms the transition from carnivorous animals to the tribe of monkeys; it is that of the lemurs, whose cranium presents the following characteristics, viz.: Occipital ridge sufficiently strong, separated from the occipital foramen by a surface of the same extent as in cats; temporal region full, as in the latter; temporal lines separated in their entire length; orbits incomplete, yet having a continuous circumference on account of the invariable junction of the external orbital apophysis with the zygomatic bone; great proportion of the encephalon in these animals, the total size of which does not, however, surpass that of the cat, weasel, or very small dogs.

If from the lemurs we pass to the cynocephali, we remark, 1st, the preponderance of the antero-posterior diameter of the cranium; the notable reduction of the bi-temporal, which nevertheless is still greater than any of the other transverse diameters. 2d, absence or shortness of the inter-parietal ridge; the more anterior and central position of the occipital foramen. The detailed description of the cranium of the mandril* will give a more precise idea of the cynocephalus type. In an adult mandril, four feet and a half high, the arch of the cranium, from the orbits to the occipital ridge, presented a surface of thirteen centimetres; from this ridge to the occipital foramen, the same region equalled six centimetres. Orbits elliptic, complete as in man, and very near each other. The ridges for the insertion of the temporal muscle parted from the external orbital apophysis, and united very near the occipital ridge, so as to comprehend in the space between them a large triangle, the area of which was plane, the base anterior and corresponding in its middle to the superior longitudinal sinus, and by its sides to the cerebral hemispheres. We see at once how much this disposition favors the amplitude of the cerebral cavity; nevertheless, the arch of the cranium was flattened, and the prominent jaws were armed with very long canine teeth, as in carnivorous animals. The head of the papio* resembles, in all these respects, that of the mandril.

In the macaques† the occipital foramen is quite as central as in the mandril; but as they are smaller, the relation of the encephalon to the jaws is more considerable; from whence result the following dispositions. The occipital ridge is wanting, or but slightly marked; the angle of union between the parietal bones with the occipital forms a gentle curve; the temporal lines, isolated in their whole extent, intercept a convex and quadrilateral surface formed by the parietal and frontal bones, the sinuses of which are short and narrow; finally, the external surface of the occipital is remarkably full and projecting, a circumstance which we have not encountered even in the smallest of carnivorous animals; the jaws are very much in advance, and the canine teeth salient.

* A monkey of the Gold Coast of Africa.

† Baboon of the Philippine Islands and Cape of Good Hope.

‡ Hare-lipped monkey.

Apes, callitrichi* (*semnopithecus*, Fr.) do not differ from the macaquo in the position of the occipital foramen; but with them the interval between the temporal lines is greater and more convex, and the jaws, which are much less projecting, are armed with canine teeth, in nearly the same proportion as in man.

Finally, in the gibbo, the chimpanzee (*simia troglodytes*), the pongo and the orang, the face diminishes in volume; the occipital foramen becomes more central; the ridges which are proper to carnivorous animals are effaced; the arch of the cranium is enlarged, curved and elevated.

[To be continued.]

OPERATIONS PERFORMED AT THE MASS. GENERAL HOSPITAL.

[Reported for the Boston Medical and Surgical Journal.]

NOVEMBER 19th. *Amputation above the Knee*, by Dr. HAYWARD.—Twelve years ago patient fell from a tree and injured left knee. Knee-joint became enlarged and painful, and inflammation and caries followed. Leg is now permanently flexed upon thigh; has several fistulous openings into joint, through which the carious head of the tibia can be distinctly felt. General health good, but has occasionally swelling and pain in joint.

Patient having taken—*R. Tinct. opii*, gtt. l., an hour before, was placed upon the table and the circular operation performed at the middle of the thigh. The hemorrhage was inconsiderable, the femoral and profunda arteries were secured by ligatures, the edges of wound brought together by interrupted sutures, and the cold-water dressings applied.

Wound had a healthy appearance, and patient continued to do well until November 24, at 9, P. M., when a small stream of blood was seen to issue from the stump, and on inquiry patient reported that he had suffered more pain than usual in the stump during the afternoon. Cold applications were made. The bleeding ceased readily, and did not return until the next day at 3, A. M., when it broke out through the lips of the wound, and flowed with considerable freedom; the sutures were removed and the stump opened by the house-surgeon, but owing to the coagula of blood the mouth of the vessel could not be discovered; a tourniquet was then placed around the limb, which controlled the hemorrhage effectually. At 10, A. M., the patient was removed to the operating-room, the stump cleansed of the coagula and the tourniquet taken off. No hemorrhage, however, followed; and, on examination, the ligatures around the femoral and profunda arteries were found to be secure, the former pulsating strongly down as far as the ligature. A slight oozing having been observed at the lower part of the stump, the wound was carefully sponged at that point, and the blood found to flow from the mouth of a small muscular artery, which was immediately taken up and secured. The wound was then kept open for some moments, and a glass of wine administered to the patient; but, as no more bleeding occurred, the lips of wound were again brought together and patient removed to his bed.

* Green monkey.

Since then no further hemorrhage has taken place; wound appears to be doing extremely well, and the progress of recovery will not probably be retarded more than a week by this very unusual occurrence.

DECEMBER 3d. *Amputation of a Penis*, by Dr. HAYWARD.—Five years ago patient ruptured the frænum; two years after, perceived a small tumor of the size of a pea by the side of frænum. This continued to increase slowly until about one year ago, when it ulcerated, since when has been chiefly treated by caustics and stimulating applications, which seem to have aggravated the disorder. Now ulceration extends nearly around penis; prepuce entirely gone, with about half of the corona glandis; ulcer dark and sloughy in some parts, with ragged and hardened edges; a firm, hard band around penis at upper part of ulcer. Has at times much pain, particularly at night. General health not very good. Has never had syphilis.

Amputation was performed in the usual manner, a piece of tape having been tied firmly round the penis near the pubes to prevent retraction, and the integuments being well drawn down. Five arteries were secured by ligature—two on the dorsum, one each side of the septum, and a small one in the corpus spongiosum. Some scraped lint was then placed on the stump, and cold-water dressing applied.

SURGICAL CASES AT THE ALBANY MEDICAL COLLEGE.

[Communicated for the Boston Medical and Surgical Journal.]

Dr. March's Surgical Clinique, December 3, 1842.—1. A CHILD of Mr. I. N., aged 7, with irritable ulcer of the tongue and mucous membrane of the right cheek. Nit. arg. was applied locally, and calomel and pulv. Dov. ordered in alterative doses.

2. Mr. C. McC., aged 22, of Westerlo, who appeared at the last clinique with a congestive state of the retina of the right eye, causing partial loss of vision, and attended with deep-seated pain. Under the treatment adopted a very decided improvement has taken place. The pain has disappeared, and vision has been almost completely restored.

3. A. F., aged 9, upon whom the operation for strabismus was performed at the last clinique. The operation has been perfectly successful, and vision, which had previously been dim, is now much improved.

4. Miss I. D., aged 15, with irregular contraction of the flexor muscles of the right fore-arm and hand. Graduated compresses and a splint were applied.

5. P. T., aged 10, with a scrofulous ulcer on the right side of the neck, of 12 months' standing. A small portion of the ulcer, which presented a fimbriated appearance, was removed. A small abscess, situated near the ulcer, was opened, and its contents evacuated. Nit. arg. was applied to the ulcer, and the wounds dressed with lint and adhesive straps.

6. Miss L. C., aged 15, on whom the operation for strabismus was performed at the previous clinique. Compress and roller were applied to correct a slight protrusion of the affected eye.

7. C. L., aged 7, of West Troy, with enlarged tonsils, which were removed.

8. Miss I. L., aged 17, of West Troy, with enlarged tonsils, which were removed.

9. Miss M. C., aged 16, of Greenbush, who appeared at the previous clinics with necrosis of the tibia. The ulcer, which is in a healthy condition, was dressed with pulv. sang., dry lint and a roller.

10. Mrs. M. C., aged 31, with an irritable ulcer on the back of the right hand. Alternative medicines were ordered.

11. Mrs. I. F., aged 66, with gastrodynia of five years' standing.

12. M. E. L., aged 11; the operation for strabismus was successfully performed on this patient.

13. A child of Mrs. M. C., aged 9 months. This was a case of congenital talipes varus of both feet. The heel was raised; the inner edge of the foot drawn upward; and the whole foot drawn inward. The operation for the cure of this deformity was performed by Dr. M. The tendo-Achillis of the right foot was put upon the stretch, a narrow sharp-pointed knife passed under it, and the tendon divided by cutting outward as the knife was withdrawn; a single drop of blood followed the operation. A foot-board, adapted to counteract the three-fold distortion, compresses and a roller were then applied. It was proposed to operate upon the other foot at some future time.

14. Mr. I. B., a colored man, aged about 30. It was stated by Professor Hun that the patient had always enjoyed good health until last April, when he had a severe attack of pleurisy of the right side, which confined him to bed for several months. About the beginning of July a swelling was observed on the right side just below the nipple, which was opened by his attending physician, and a pint and a half of pus was discharged. The opening remained, and has discharged pus up to the present time. The discharge is now about a gill a day, but a few weeks ago was more considerable. A probe passed into the opening, enters about two inches upward and inward, passing under the rib. The pulse is quick and feeble; he is greatly emaciated; his appetite and digestion are good. On percussion, by Professor Hun, the right side gave a flat sound in its whole extent, anteriorly and posteriorly. The respiratory murmur is absent on that side. On the left side, the sound on percussion is clear, and the respiratory murmur is loud, mixed with some friction—sound towards the base. From these symptoms it was inferred that there was a purulent effusion into the cavity of the pleura, which has made its way externally and discharged by the opening. The different directions which purulent effusion into the pleura might take, were fully explained by Professor Hun.

15. Mr. P. D., aged 35, with unreduced fracture of the ulna, and dislocation of the head of the radius, which took place a year ago. This case presented exostosis of the ulna, with numbness of the hand arising from compression of the ulnar nerve.

16. Mr. I. McC., aged 40, who in the Canadian troubles, in 1835, received a severe blow on the os frontis and ossa nasi, producing compression of the external table of the os frontis, with great laceration of

the soft parts. As the upper part of the nose is destroyed, Dr. M. proposes to remedy the deformity by dissecting a flap of the proper shape and size from the forehead, and after paring the edges of the deformed part, adapt it by a twist and sutures to the raw surface.

17. Mr. I. D., aged 45. About twenty years ago this patient had an attack of articular rheumatism, which confined him to bed for several weeks. Since that time he has enjoyed tolerable health, with the exception of occasional rheumatic pains, shortness of breath, and palpitations after violent exercise. Six months ago the dyspnoea and palpitations became more severe, and were accompanied with dizziness. These symptoms have increased up to the present time. On examination by Professor Hun, no prominence was observed over the region of the heart. The pulsations of the heart and of the carotid arteries were very visible. The apex of the heart was at the level of the interval between the 6th and 7th ribs. On percussion, the flat sound of the heart extended over a space much larger than natural. On auscultation, near the apex the first sound was obscure, and accompanied with a blowing. This blowing became more distinct as the ear approached the junction of the 3d rib with the sternum, where it was heard during both sounds of the heart. The blowing could be heard during the first sound of the heart, in the course of the carotid arteries. From these symptoms, Professor Hun pronounced the case to be constriction of the aortic orifices with insufficiency of the valves, and hypertrophy of the left cavities of the heart. The frequent complication of rheumatism with endo-carditis, and the mode in which they lay the foundation of organic disease of the heart, were very fully and clearly explained.

J. R.

BOSTON MEDICAL AND SURGICAL JOURNAL.

BOSTON, DECEMBER 14, 1842.

DECOMPOSITION OF DEAD BODIES.

DOUBTLESS the fact is familiar to persons of observation, that within a few weeks after the interment of a body, a multitude of worms appear, in the highest state of activity. Nothing but the bones resist their combined force, and when these are completely denuded, the worms die, apparently because there is nothing remaining to support them. Probably this state of things exists with a majority of interments, both in town and country—in the tight, dark tomb, as well as in the deep, cold grave. This, too, occurs in a coffin, which, as frequently as otherwise, is nearly air-tight. Now, the question to be propounded for elucidation by some of our correspondents, learned in entomology, is this—the origin of these silent operators, and their final destiny? Under what circumstances, and where, is the perfectly developed insect to be found, what is it called, and how is it to be designated?

The idea has been advanced, and not without a show of reason, that these creatures previously existed in the muscles, and the commencement

of chemical decomposition favors their development. When Dr. Bowditch exhibited the deltoid muscle, a few weeks ago, studded with the embryos of the trichina spiralis, it was not unnatural to suggest that they could be sustained for a while, after the death of the individual, upon the very fibres amongst which they were so mysteriously lodged.

Without further remarks, the object of these inquiries will be understood; and those who will favor the Journal with a solution of the problem, if such it may be regarded, will oblige one whose inquiries are modestly embodied in these homely and unscientific observations.

A distinguished Dentist.—Galignani's Messenger announces that Dr. Brewster, an American, has recently been created, by the Emperor of Russia, a Knight of the order of *St. Stanislaus*, and *Dentiste Honoraire* of the Russian Court. The Norwich (Conn.) Courier of Nov. 23, gives the following biographical sketch of this fortunate individual :

Christopher Starr Brewster is the son of a highly respectable citizen of Norwich, a man still active among us, in vigorous old age. He is descended, in the sixth generation, from one of the venerated company of Pilgrims, who landed from the May-Flower on Plymouth rock; and there are those among us who think that his son, Dr. Brewster, possesses a claim to more honorable consideration in this high descent, than in any rank which the Autocrat of all the Russias has in his power to confer. We are not so scrupulously republican, however, as to attach no value to the well-merited distinction he has obtained abroad. Dr. B. has a still higher claim to respect in the fact that he is a self-made man, having had none but the ordinary advantages of education, and neither wealth nor professional patronage to smooth his upward way.

At the age of 21, with no capital but a set of implements, in the use of which his own ingenuity was his sole instructor, he commenced the practice of dentistry, travelling northward into Canada. From thence he went westward, and down the Mississippi to New Orleans. After remaining there for a time he visited the West Indies, and returning, he went through most of our southern cities, gaining skill and reputation at every step, till he established himself in Charleston, where he stood for some years at the head of his profession. He then removed to New York, and after a short residence there went to Paris, where he has become known throughout Europe. An operation which he performed about three years since, attracted great attention, and was detailed in the public journals as a miracle of skill. It was in the case of a lady, all the teeth of whose upper jaw were set horizontally, protruding the face in a frightful manner. Dr. B. was successful in effecting a complete transformation, to the astonishment of all who knew anything of this singular case of deformity. Dr. Brewster has since been constantly adding to his reputation by other striking performances, till we hear of his recent promotion without surprise.

St. Louis University.—The medical department appears to be well sustained, and the school as flourishing as many on the Atlantic shore. Dr. Linton, professor of Obstetrics, gave an introductory lecture at the opening of the regular annual medical term, in the early part of November, which was well received, judging from the comments in the *St. Louis*

Daily Evening Gazette. The learned gentleman is a bold advocate for a medical reform; but the sort of reformation he would have, is not clearly defined. From the following quotation, it is evident that he would have St. Louis the centre of science west of the mountains. This is quite commendable. The doctor alluded to the advantages of St. Louis for both public and private teaching, and concluded by saying that no city west of the mountains affords greater facilities and more ample means for medical instruction. He also expressed the following opinion in regard to medical schools. "The time is not far distant, when a medical school, with two or three hundred students, without a hospital, and without any means of anatomical and surgical instruction, except what a course of public lectures affords, will be considered a humbug—such a state of things all the props which medical demagoguism can devise, cannot long support."

Geneva Medical College.—The class of this year, says a Geneva paper, already numbers 170, the best evidence of its widened fame, and of the public estimate of its merit. The fine building which was erected last year, is found to afford every convenience, to be admirably adapted to its contemplated purposes, and to afford ample accommodation for the numerous class attendant upon the lectures. With the physical requirements so complete, and with the opportunities for mental instruction so great as they always have been, and as they always will be under the present Faculty, we can see no reason why it should not progress, increasing in reputation and usefulness, and repaying the labor of those who fostered its beginnings.

Such is the language of a paper published at Geneva, from which the above paragraph was taken. The prosperity of the school is certainly encouraging, since the class is a large one—larger, we believe, than any previous one in that institution.

Homœopathic Pharmacopœia.—James Kitchen, M.D., of Philadelphia, has translated Jahr's work, with additions, which is apparently much esteemed by this particular school of practitioners. The number of substances described in it, is 310, says the Examiner. From the observations in that publication, we have had our curiosity excited in regard to it, and really wish that we might be indulged with the examination of a book that holds such rank in homœopathy.

Exchange Book Agency.—Mr. J. E. Fuller, Franklin street, Boston, has circulated a plan in regard to obtaining new, and disposing of old, or duplicate works, which may be, judiciously conducted, of immense advantage to literary and scientific men. He will furnish American and foreign books, both new and old, and second handed, at the lowest cash prices. In a word, any operation may be effected through Mr. Fuller, in the way of purchase, or exchange, either at home or abroad, which may be desirable. This information may be of general interest to medical men, and is therefore published in this place for their benefit and convenience.

Arguments in favor of Phrenology.—Dr. Hamilton, of Rochester, N. Y., some two years ago had the misfortune to deliver a lecture against the

doctrines of phrenology, before the Athenæum in that place, which is not likely soon to be forgotten or forgiven. In the Phrenological Journal, a review of it is continued, from month to month, distinguished for its pungency, causticity and ingenuity. But after all it is labor unnecessarily expended, since the science is firmly established. The only difficulty it has to contend with, is its friends—who are too numerous. If there were fewer professors of phrenology, and more correct knowledge amongst the army of believers in regard to the physiology of the brain, there would be less occasion for lamenting that ignorance and presumption were arrayed against truth.

Medical Miscellany.—At Chatham, Del., a jury of inquest returned the following verdict: "that the deceased (Donald Campbell) came to his death, which was hastened by the injudicious treatment of his medical adviser, Dr. Cotton"—who was therefore taken into custody, and sent to the jail in New Castle.—Messrs. Lambert & Mack are lecturing very successfully at Nantucket, with a manakin.—Smallpox has appeared at Wellington, Onondaga Co., N. Y. Several cases have recently broken out in the easterly part of this State.—Hydrophathy is certainly gaining friends with encouraging rapidity—encouraging to those who practise it.—Scarlet fever again manifests its usual severity. We asked a distinguished practitioner, a few years since, what he prescribed for it—and his answer was, "*nothing at all.*"—The newly-invented breathing tube—new as regards its introduction here, is making friends. Some who were evidently consumptive, imagine, at least, that the capacity of their chests has been enlarged by breathing through it.—Seven whole columns and two thirds of another, solid type, are devoted to a report upon neurology, *alias* animal magnetism, in the New York Evening Post of December 6th. We do not know what to make of it; at this rate, we shall all be mesmerized before we are aware of it. Dr. Buchanan is there—and our excellent friend, Silas Jones, Esq., formerly of this city, seems to stand sponsor for the truth of these seven columns of report.—Dr. John P. Harrison, professor of Materia Medica, Cincinnati, delivered a lecture, recently, on the moral exposures of the profession, a copy of which has been received. It is quite equal to any of the introductions of the season. Next week we propose to comment further upon it.

TO CORRESPONDENTS.—Remarks on the Power of the Imagination—Dr. Durkee's Reports of Cases—Dr. Comstock on the Humoral Pathology—and Dr. Mansfield on Mesmerism, are on file for publication.

MARRIED,—At Newtown, Conn., Dr. A. Nelson Bell, of Franktown, Va., to Miss Julia Ann Hamlin, of Newtown.—In Hebron, Conn., Dr. John Whitmore to Miss M. Hazeltine.—At New York, L. D. Seymore, M.D., of Moscow, N. Y., to Miss L. C. Clark.—At Washington, D. C., Dr. A. H. Tolson, of Maryland, to Miss H. B. Talliferro, of Virginia.

DIED,—At Parsonsfield, Me., Dr. Silas Wedgwood, 29.—At Brunswick, Me. Dr. Jonathan Page, 65.—At Philadelphia, Dr. James A. Thackara, 47.

Number of deaths in Boston for the week ending Dec. 10, 39.—Males, 19; Females, 20. Stillborn, 4. Of consumption, 7—typhus fever, 2—palsy, 1—old age, 2—inflammation of the lungs, 1—convulsions, 1—dyspepsia, 1—infantile, 2—marasmus, 2—child-bed, 1—inflammation in the bowels, 1—smallpox, 1—apoplexy, 1—teething, 2—scarlet fever, 1—dropsy in the head, 1—disease of the brain, 1—throat distemper, 1—dropsy on the brain, 1—pleurisy, 1—croup, 1—fits, 2—worms, 1.

REGISTER OF THE WEATHER,

Kept at the State Lunatic Hospital, Worcester, Ms. Lat. 42° 15' 49". Elevation 483 ft.

1842. Nov.	THERM.			BAROMETER.			Wind, 2, P.M.	Weather, 2, P.M.	Remarks.
	8 A.M.	2 P.M.	8 P.M.	8 A.M.	2 P.M.	8 P.M.			
1 Tues.	40	60	56	29.66	29.56	29.54	S W	Fair	
2 Wed.	38	54	46	29.68	29.64	29.65	N W	Fair	
3 Thur.	28	48	45	29.82	29.77	29.77	N W	Fair	
4 Frid.	30	51	47	29.71	29.66	29.63	N W	Fair	
5 Satur.	33	56	54	29.63	29.56	29.53	N W	Fair	
6 Sun.	48	64	59	29.47	29.51	29.48	N W	Fair	
7 Mon.	48	58	54	29.33	29.30	29.31	N W	Fair	
8 Tues.	42	44	42	29.17	28.89	28.83	N E	Rain	1.02 inch rain.
9 Wed.	39	44	43	29.16	29.19	29.19	N E	Cloudy	Hail storm at 10, P. M.
10 Thur.	36	44	41	29.19	29.21	29.25	N W	Fair	
11 Frid.	48	44	43	29.29	29.38	29.44	N W	Fair	
12 Satur.	32	44	44	29.56	29.54	29.52	S E	Cloudy	
13 Sun.	39	43	40	29.40	29.44	29.49	N E	Fair	
14 Mon.	38	44	42	29.50	29.41	29.33	S E	Cloudy	.34 inch rain.
15 Tues.	37	47	43	29.27	29.33	29.42	N W	Fair	
16 Wed.	32	39	38	29.42	29.38	29.38	N E	Snow	
17 Thur.	28	41	40	29.31	29.38	29.39	N E	Cloudy	.50 inch rain.
18 Frid.	46	44	36	28.74	28.60	28.69	W	Fair	Beautiful sunset.
19 Satur.	23	34	34	28.97	29.04	29.10	S W	Fair	
20 Sun.	25	36	32	29.42	29.44	29.46	W	Fair	
21 Mon.	24	36	32	29.49	29.52	29.55	S W	Fair	Aurora borealis.
22 Tues.	32	38	36	29.61	29.64	29.64	S W	Fair	Beautiful sunset.
23 Wed.	21	46	40	29.63	29.60	29.60	S	Fair	
24 Thur.	34	34	32	29.23	29.05	29.19	N	Snow	
25 Frid.	28	40	44	29.61	29.61	29.62	S W	Fair	Snow storm—two inches snow.
26 Satur.	28	39	37	29.55	29.68	29.63	S W	Fair	
27 Sun.	32	30	24	29.06	28.96	29.09	N W	Fair	
28 Mon.	14	22	22	29.35	29.40	29.40	N W	Fair	
29 Tues.	14	23	25	29.56	29.64	29.65	N W	Fair	
30 Wed.	20	26	25	29.75	29.62	29.46	N W	Cloudy	Snow storm commenced at 3, P. M.

November has been a pleasant month. Little rain has fallen. The barometer has ranged from 28.60 to 29.82; thermometer, from 14 to 64. Rain, 3.36 inches.

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Chelsea, September, 1841.

Sep. 8—eoptf.

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Ap. 6—

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